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ABSTRACT

Left handed people have had bad publicity throughout history, and the resulting myths and disadvantages of left handedness have often not been properly dealt with in the classroom. Our language itself maintains a bias against the left, and many other cultures have defined the left as disreputable. Today's life style also provides many physical disadvantages, e.g. appliances and tools designed for right handers, etc. The school environment places social and emotional pressures on the lefties. Researchers disagree as to the the genetic, environmental, or brain organization origins of handedness, but it is clear that teachers should not attempt to change the handedness of students. The methods teachers use to deal with handedness should include observing students, modifying the classroom environment and writing program, and providing models. (DS)

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WHAT RESEARCH TELLS US ABOUT LEFT-HANDEDNESS

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In this paper the researcher attempted to become more acquainted with the left-hander's world. His findings centered around the myths, the causes, the disadvantages, and the fine motor handicaps of left-handed people.

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WHAT RESEARCH TELLS US ABOUT LEFT-HANDEDNESS

During the past decade educators exhibited a growing concern for the educational needs of many ethnic and racial minorities. Another minority group, left-handed people, were virtually forgotten. Yet, left handers comprised approximately ten percent of the population. In a class of thirty children that meant that on the average a teacher would find two or three left-handed students. Many teachers felt helpless in their dealing with these individuals. Little instruction, materials, or in-service training was provided so teachers could feel comfortable around lefties. Here was an important problem that was ignored.

As a result, in this paper the researcher attempted to become more acquainted with the left-hander's world. His findings centered around the myths, the causes, the disadvantages, and the fine motor handicaps of left-handed people.

During the researcher's investigation, he denoted that our language contained many anti-left-handed connotation. The word "sinister" was an excellent example. It came from Latin, and at first meant simply left or left-sided. Then it acquired the meaning of evil, unlucky, or malign. Another such word was "gauche." In French, it meant left, but in our language it meant awkward or socially inept. The Oxford English Dictionary reported "to go over the left" was to reverse a meaning and, in general, to turn the good into the

bad.

Throughout history left-handed individuals have had bad publicity. The Bible used more than a hundred positive referenced to the right-handed, but very few to the left. In his view of the Second Coming, Matthew said: "He shall separate them from one another, as a shepherd divideth his sheep from the goats; and he shall set the sheep on his right hand, but the goats on his left. Then shall the King say unto them on his right hand, Come ye blessed of my Father, inherit the kingdom prepared from the foundations of the world."

Faithful painters of the Last Judgment, often lefties like Michaelangelo, immortalized prejudice by having God point the way to Heaven with His right hand, the way to Hell with His left.

Besides Western civilization various other cultures have defined the left as disreputable, radical, murderous, bewitched, profane, impure, and feeble. Certain Africans believed that if on the way to visit a sick friend, one saw a mongoose on the left side of the path, the friend would die. Moslems ate and did happy things with their right hand, but to touch another person with the left was a social insult. Some North American and European natives guarded the vulnerable side of their nature from temptation of the flesh by wearing a wedding ring on the third finger of the left hand. The Maori people of New Zealand equated and protected themselves by wearing

charms and amulets on the left.

According to Jeannine Herron (1:56) left-handers have been tarred, even in common sayings, with the left hand's noisome reputation.

> Quevedo said, "Tis not safe trusting a Left-Handed Man with Money." A daughter of the left hand was once an illicit child. To see with the left hand meant to wed beneath your station. To go over the left shoulder was to squander. To give the left hand of friendship was to be hostile. Left handed flattery was a put down. The left hand of fortune brought bad luck.

Present day investigations have revealed a higher percentage of lefties among the brain-injured children as compared to "normal" children. Jeannine Herron (2:53) stated that compared to the ten percent of left-handers in the normal population, twelve to twenty percent of epileptics and mental defectives are left-handed.

Today's life style provides many physical disadvantages for left-handed people. An electric iron has the cord on the wrong side. In a pay phone booth a lefty has to cross over his body to deposit his coins. Lawn mowers, motor boats, cars, can openers, stringed instruments, sheaths for revolvers, and hunting knives are designed for right-handed people. Watches usually have a right-handed winding system. Doorknobs, faucets, and light switches are placed for the convenience of the right handers. Crocheting directions are backwards. At dinners the coffee cup and silver are placed on the "wrong" side of the plate. Food is served

from the "wrong" side and elbows get in the way. Screws and bolts have right-handed threads. Of course, handshaking, swearing on the Bible, and saluting of the flag is executed with the right hand. There is a rarity of left-handed scientist and surgeons simply because all of the paraphernalia of their trade is designed for right-handers.

Not only have left-handed people encountered problems in daily living, but the structure of our schools has not allowed for this deviation in physical development. Paper cutters, pencil sharpeners, water fountains, file cabinets, scissors, and desks are all designed for the ease and proficiency of the right-handed people. Even book leaves must be turned from the right to the left.

The school environment places social and emotional pressures on the lefties. A school age child should not be expected to change his hand preference. Yet, studies have shown that some well meaning teachers still insisted that lefties change hands. Diane Robinson (3:6) questioned 550 individuals about their hand dominance. In a subgroup of high schoolers and college freshmen she found 37 percent of erstwhile lefties, six of whom (16 percent) had been forced to change handedness.

Scientists have long engaged in studies to determine the causes of handedness in individuals. Possible explanations have been numerous and wide ranged. Some thinkers believed

handedness was related to the earth's rotation. Other theorists believed eye dominance played an important role. Bakan (4:77) concluded lack of oxygen to the brain during pregnancy or child birth caused left handedness. One authority claimed that the cause of handedness went back to ancient times. Men fought holding their shields with their left hand, so as to protect the heart while using weapons in the right hand. Thereby freeing their right hand to develop manipulative skills with their sword.

A Yale pioneer in child developmental stages Arnold Gesell (4:53) believed handedness had a genetic origin. It was genetically determined like blue eyes or curly hair. Infants with stronger neck reflexes on the left turned out to be lefties.

Some behaviorists believed environment played a much bigger part in hand preference than genetics. Dr. Robert L. Collins, a behaviorist at Jackson Laboratory in Bar Harbor, Maine studied the paw preferences in genetically uniform mice.

He reached his conclusions after doing comparison studies of mice tested in surroundings that were unbiased, favoring neither the right nor the left paw; and then in two other situations, one favoring right paws and one slanted toward left paws.

He controlled bias or lack of it by positioning a feeding tube either in the center of a box or to the right

or left. In the unbiased experiments he found there were about an equal number of right- and left-handed mice, while in the other situations about 90% of the animals went with the imposed bias.

As a result of his studies, Collins (5:184) believed the only role a gene or genes had in handedness was to direct the function of using one hand. The biased world of right handers that we lived in pretty much determined which hand we would use.

Several learned environmental theories have emerged. Herron (6:53) stated:

> Hand preference was not determined until the three to six years. Before that time infants were ambidextrals. Handedness developed along with the growth and maturity of the nervous system and particularly with the growth of the myelin, an insulating matter, in the corpus callosum. Together with handedness, the myelination of the corpus callosum coincides with the learning of precisely controlled body movements and basic cognitive processes.

There were various explanations for the "hooked" left-handed writing style. The "hooked" writing was a learned adaptation due to the necessity of writing from left to right which is a cramped body movement for lefties. "Hooked" writing enabled lefties to see their writing more easily. "Hooked" writing was due to the fact that right-handed individuals started lefties with the paper slanted in the wrong direction.

Another group of theorists believed that handedness had its orgin in the brain's organization, a physical basis. Different functions are handled by the right and left cerebral hemispheres. The division of labor was quite simple with right handers. The left side of the brain handled language intergretion, while the right specialized in mental imagery and spatial relationships. However, left handers did not follow a simple pattern. Horn (7:31) reported that about sixty percent followed the right-handed pattern; the rest went their own way showing reverse specialization.

Due to the difficulty in determining hemispheric division with lefties, Jerre Levy and Mary Low Reid of the Psychology Department at the University of Pennsylvania in Philadelphia devised what they called a "simple measurement" to detect which hemisphere controlled which functions among the left-handed individuals. Detection was based on the analyzation of writing style and handedness. Seventy-three university students, both females and males and left- and right-handed writers were included in the study. The psychologists used standard tachistopoc tests that enabled them to present verbal or spatial messages to one brain hemisphere at a time. By comparing how well each side did on each test, the psychologists were able to tell which hemisphere was dominant for language and which for spatial relationships. Levy and Reid (8:338) reported that among the left handers who

wrote normally and the one right hander who had a hooked writing posture, the right hemisphere was specialized for language, and the left for spatial relationships. For the normal writing right handers and the hooked left handers, the specialization was reversed.

Regardless of the source, heredity, environment, or brain organization, as educated beings, humanities first responsibility to the left-handed people is to aid them in establishing their hand preference, and second, to provide special help for these individuals who are left-handed and live in a right-handed world. Educators have taken steps to assist teachers in this task. There are many practical and simple methods. Observation is one natural tool.

Foerster (9:213) stated:

> Learning centers in kindergarten and early primary rooms can provide many opportunities for observing children in their natural situations. The teacher can observe the child as he or she:
>
> 1. engages in building activities using blocks.
> 2. works with puzzles
> 3. uses a play telephone
> 4. plays rhythm instruments
> 5. puts on and takes off clothing using buttons, zippers, and snaps
> 6. ties his or her shoes
> 7. uses a brush and comb in the grooming center
> 8. picks up books and turns the pages
> 9. uses play tools

Observation can occur during art and craft activities. Foerster (10:213) related:

> The teacher may watch as the child:

1. works with clay and other manipulative materials
2. uses scissors, paint brushes, and crayons
3. works with finger paints and chalk
4. makes paper maché sculptures, sponge paintings, or string pictures

The playground offers another natural setting. Foerster (11:213) stated:

> The teacher can observe as the child:
> 1. throws and receives a ball
> 2. uses bean bags, Indian clubs, and other objects
> 3. uses playground equipment

Routine classroom activities provide another excellent observation period. These would include viewing the child as he washes his hands before eating and as he picks up his food and utensils at snack and lunch time.

Once handedness is determined the next step is a modified writing program. Minor adjustments in the classroom environment are essential for lefties. It is important to provide lefties with a left-handed model. There are several ways this can be accomplished as stated by Foerster (12:214): "Team teaching" with a left-handed colleague can be implemented. Another possibility is to train a left-handed aide to work with lefties. Another alternative is to enlist the aide of an upper grade left-handed child who has good positioning of body, hand, and paper.

The "hooking" position which many lefties exhibit

is the result of poor instruction in the beginning stages of handwriting. There are several preventive measures. Foerster (13:214) suggested:

1. Encourage a left-handed child to do a lot of writing at the chalkboard on the left side. You can supervise him more closely and thus he is less likely to develop bad habits. Greater freedom of movement is permitted in chalkboard work which prevents smudged work and left-to-right orientation can be watched carefully.

2. Observe the physical setting for writing. Check to see that your left-handed children have desks that are comfortable for them, preferably lower than for dextral children of the same height, so that they can see what they are writing. Lighting should be adequate and over the right shoulder so that the hand will not cast a shadow on the writing surface.

3. For manuscript writing have the children place their papers straight on the desk just as right-handed children would. Show them how to push the paper with their right hands frequently as they write. Have them hold their pencils loosely and farther back from the writing point as much as one and one half inches. To remind them where to put their fingers you may want to place a rubber band or piece of tape at this point on the writing instrument. The eraser end of the pencil should point over the left shoulder. Encourage them to keep the left elbow close to their bodies and their left hands well below the line on which they are writing.

4. For cursive writing, the children will place the paper toward the left side of the desk turned in a clockwise direction. The slant of the paper for cursive writing is very important. The position of the fingers on the writing instrument will be the same as for manuscript-well back from the point with the blunt end directed over the left shoulder. Again encourage them to keep the left arm close to the body and the left hand below the writing line. Allow them to slant their writing to the left or to write vertically. It is very difficult for the left-handed child to slant cursive writing to the right as the models suggest. You will want to provide them with a handwriting model of

the cursive alphabet at their desks showing left-slant and vertical writing.

5. If the child writes manuscript well, encourage him or her to continue to manuscript. Many people use these form of writing exclusively to fill their writing needs and do so without sacrificing fluency. There is no reason why everyone must learn and use cursive writing in school. Manuscript is acceptable and communicates effectively.

6. You may want to urge your lefties to learn to type. The typewriter was developed by a left-handed person and consequently the most frequently used letters such as a, e, and s are found on the left side of the keyboard.

7. When the students sit around a table, let the lefties sit where they will not bump elbows.

It is true, of course, that the world of free enterprise has joined in on the march to create an entire spectrum of equipment that is especially designed for the left-handers. These gadgets range from scissors to fine-tuned bolt-action rifles. However, there are notable drawbacks to this sort of tailor made gear. The primary one is that special order goods have a high price tag. A second bad feature is low trade in value.

Despite the problems, left-handers should forge on in this right-handed world. They should not give up the ship. For inspiration, they need only to reflect on the great contributions made by the following lefties: Harry Truman, Leonardo DaVinci, Benjamin Franklin, Gerald Ford, Charlie Chaplin, Harpo Marx, Picasso, Babe Ruth, Paul McCartney, Ringo Starr, Rock Hudson, Kim Novak, and F. Lee Bailey.

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